Claims:

1. A system, comprising:

a fluid flow channel configured to house a flow stream of a fluid containing a suspension of particles;

a plurality of electrodes coupled to the fluid flow channel, the plurality of electrodes configured to become energized by an AC signal to focus the particles within a region of the flow stream of the fluid using dielectrophoresis forces; and

a detector for observing the particles after they have been focused.

2. The system of claim 1, the system being configured to focus particles in two orthogonal directions.

3. The system of claim 1, the plurality of electrodes comprising a flat array configuration.

4. The system of claim 1, the plurality of electrodes comprising an annular array configuration.

5. The system of claim 1, the plurality of electrodes comprising an octupole configuration.

6. The system of claim 1, the detector comprising an optical detector.

7. The system of claim 1, the detector comprising an impedance detector.

8. An apparatus comprising electrodes coupled to opposing walls of a fluid flow channel, the electrodes being configured to generate negative dielectrophoretic forces that focus flowing particles to the center of the fluid flow channel.

9. The apparatus of claim 8, the electrodes comprising ring electrodes arranged in an annular array configurations.

10. The apparatus of claim 8, the electrodes comprising interdigitated electrodes arranged in flat array configuration.

11. The apparatus of claim 10, the flat array configuration comprising electrodes of varying lengths.

12. The apparatus of claim 8, the electrodes arranged in an octupole configuration.

13. A method, comprising:

flowing a suspension of particles in a suspending fluid along a channel;

applying AC electric signals from a signal generator to electrodes coupled to the channel;

deflecting the particles to a narrow region of the fluid by negative dielectrophoretic forces imposed on the particles by the electrical signals applied to the electrodes; and

detecting the particles by a detector disposed downstream of at least one electrode to analyze the narrow region.

14. The method of claim 13, further comprising lysing particles based on characteristics of the particles.

15. The method of claim 14, the step of lysing comprising electroporating the particles to introduce an agent.

16. The method of claim 14, the step of lysing comprising electroporating the particles causing the particles to lose viability.

17. The method of claim 14, the step of lysing further comprising applying a signal to the particles.

18. The method of claim 13, further comprising deflecting the particles based on feedback from the detector.

19. A method , comprising:

flowing particles in a channel;

focusing particles to a first narrow region of the channel using negative dielectrophoretic forces generated by electrodes coupled to the channel; and

focusing the particles to a second narrow region.

20. The method of claim 19, further comprising detecting the particles.

21. The method of claim 20, where detecting comprises optical detecting.

22. The method of claim 19, where the second region is determined using feedback.